

Claims

1. A method for distributing data stream locally, the method comprising:
 - receiving first transmissions from a digital broadcast network by means of a gateway terminal,
 - 5 - processing the first transmissions by means of the gateway terminal resulting in a wireless digitally modulated local broadband second transmission,
 - re-transmitting the received first transmissions as the wireless digitally modulated local broadband second transmission, and
 - receiving the wireless digitally modulated broadband second transmission by at
 - 10 least one multimedia terminal.
2. A method according to claim 1, wherein the step of processing further comprises de-multiplexing the data stream of the first transmissions, re-multiplexing at least a part of the data stream of the first transmission with a locally stored data resulting in said wireless digitally modulated local broadcast
- 15 transmission.
3. A method according to claim 2, wherein the locally stored data is one of MP3 music, multimedia messages, multimedia album, picture, album, movies.
4. A method according to claim 2, wherein the locally stored data is requested via a wireless connection from the multimedia terminal.
- 20 5. A method according to claim 1, wherein the step of processing further comprises scrambling the data stream of the first transmission resulting in said wirelessly digitally modulated local broadcast transmission, and data of the second transmission is de-scrambled in the at least one multimedia terminal.
6. A method according to claim 5, further comprising before the scrambling, de-scrambling the data stream of the first transmission.
- 25 7. A method according to claim 5, wherein the data stream is de-scrambled using a password.
8. A method according to claim 7, wherein the password is given by a remote controller.
- 30 9. A method according to claim 7, wherein the password comprises a same customer password which is entered to a gateway terminal and to the multimedia terminal.

10. A method according to claim 1, wherein the first transmission is saved temporarily in a memory of the gateway terminal.
11. A method according to claim 1, wherein the second transmission is transmitted at a frequency allocated to free use.
- 5 12. A method according to claim 11, wherein the frequency allocated to free use is an ISM frequency.
13. A method according to claim 1, wherein at least one of first transmissions, which is addressed to a certain multimedia terminal, which accordingly receives the second transmission, is scrambled at the gateway terminal.
- 10 14. A method according to claim 13, wherein the at least one of first transmissions which is scrambled at the gateway terminal can be opened as a pay service at the certain multimedia terminal.
15. A method according to claim 1, wherein the modulation used in the second transmission is one of OFDM, QAM, 8-VSB, QPSK.
- 15 16. A method according to claim 1, wherein the at least one multimedia terminal makes a request for a given first transmission by means of a separate wireless link.
17. A method according to claim 1, wherein the at least one multimedia terminal makes a request for a data stream, which is transmitted via the wireless digitally modulated local broadband second transmission by means of a same wireless link
- 20 which the second transmission is transmitted.
18. A gateway terminal for receiving and transmitting data stream, the gateway comprising:
 - means for receiving first transmissions from a digital broadcast network,
 - means for processing the first transmissions resulting in a wireless digitally
 - 25 modulated local broadband second transmission,
 - means for re-transmitting the received first transmissions as the wireless digitally modulated local broadband second transmission, wherein
 - the means for re-transmitting the received first transmissions comprises a
 - broadband part for transmitting the second transmission by a broadband digital
 - 30 transmission at a frequency allocated to free use.

19. A gateway terminal according to claim 18, wherein the gateway terminal further comprises an interactive part for providing connection.
20. A gateway terminal according to claim 18, wherein the gateway terminal further comprises means for saving the first transmission temporarily at the gateway.
21. A gateway terminal according to claim 18, wherein the frequency allocated to free use comprises a frequency allocated to ISM use.
22. A gateway terminal according to claim 18, further comprising means for descrambling the first transmissions, if necessary.
23. A gateway terminal according to claim 18, wherein the means for receiving first transmissions comprises a receiver and demodulator block and, after that, a descrambling block.
24. A gateway terminal according to claim 18, wherein the gateway terminal further comprises a MPEG-2 analog-to-digital converter for receiving locally available first transmissions .
- 25 A gateway terminal according to claim 18, wherein the broadband part in the gateway terminal comprises:
 - a multiplexer block arranged so that a generally available first transmission is fed into it from a descrambling block and a locally available first transmission is fed into it from a MPEG-2 analog-to-digital converter,
 - a scrambling block after the multiplexer block,
 - a modulator after the scrambling block in order to produce the desired modulation,
 - a mixer and a local oscillator in connection therewith in order to convert the modulated signal into a desired ISM frequency,
 - an amplifier after the mixer in order to amplify the second transmission to be transmitted,
 - an antenna in order to transmit the amplified second transmission, and
 - a central processing unit in order to control the operation of the gateway terminal.
26. A gateway terminal according to claim 25, wherein the modulator used is one of a OFDM modulator, a QAM modulator, a 8-VSB modulator, a QPSK modulator.

27. A gateway terminal according to claim 19, wherein the interactive part in the gateway terminal comprises:
- means for connecting the gateway terminal to an external communications network,
 - 5 - means for connecting the gateway terminal to a local signal source,
 - means for establishing a wireless link between the gateway terminal and at least one multimedia terminal, and
 - a central processing unit shared with the broadband part in order to control the operation of the interactive part.
- 10 28. A gateway terminal according to claim 27, wherein the wireless link between the gateway terminal and the at least one multimedia terminal is realized using technology complying with one of the following systems: GSM, GPRS, DECT, UMTS, WLAN, HomeRF, Bluetooth.
29. A multimedia terminal for providing user with a data stream of first transmissions, comprising:
- 15 - a receiving antenna for receiving a wireless digitally modulated broadband second transmission resulting from the first transmission,
 - where the receiving antenna for the wireless digitally modulated broadband second transmission in the multimedia terminal is arranged so as to function at
 - 20 a frequency allocated to free use,
 - a receiver block for receiving the second transmission,
 - a demodulator block for demodulating the received transmission,
 - a demultiplexer for separating the received transmission into data of their own, and
 - 25 - a descrambling block for descrambling the data, if the data is scrambled.
30. A multimedia terminal according to claim 29, wherein the frequency allocated to free use is a frequency allocated to ISM use.
31. A multimedia terminal according to claim 29, further comprising a wireless-communications-capable unit with an antenna and a central processing unit controlling the operation of the multimedia terminal in order to provide a wireless link between the gateway terminal and the multimedia terminal.
- 30 32. A multimedia terminal according to claim 31, wherein the wireless link between the gateway terminal and the multimedia terminal is arranged so as to be

realized using technology complying with one of the following systems: GSM, GPRS, DECT, UMTS, IEEE 802.11, Bluetooth, HomeRF.

33. A multimedia terminal according to claim 31, wherein the wireless-communications-capable unit further comprises means for requesting at least one of the first transmissions, which is transmitted via the wireless digitally modulated second transmission, via the wireless link.

34. A broadband digital broadcast network arrangement comprising:
 - means for receiving one of generally available and local first transmissions,
 - means for processing the first transmissions by means of the gateway terminal resulting in a wireless digitally modulated local broadband second transmission,
 - means for re-transmitting the received first transmissions as the second transmission,

wherein is arranged so as to be transmitted at a frequency allocated to free use
 - means for receiving the second transmission by means of at least one multimedia terminal.

35. A broadcast network arrangement according to claim 34, wherein the frequency allocated to free use is an ISM frequency.

36. A broadcast network arrangement according to claim 34, wherein the broadcast network arrangement further comprises means for establishing a two-way wireless link.

37. A broadcast network arrangement according to claim 36, wherein a communications connection is arranged to an individual multimedia terminal via the wireless link, through which connection the terminal is able to control the gateway terminal so as to include in its second transmission one of the first transmissions requested by the multimedia terminal.

38. A broadcast network arrangement according to claim 36, wherein a gateway terminal is through the wireless link arranged so as to force the multimedia terminal to function as an alarm/display device.

39. A broadcast network arrangement according to claim 34, wherein the second transmission transmitted by a gateway terminal comprises at least one of the following: video image, sound, data, system control information.

40. A broadcast network arrangement according to claim 34, wherein the second transmission is scrambled.

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